

Spatial Representativeness of the Fresno Supersite PM and Gaseous Co-Pollutant Measurements

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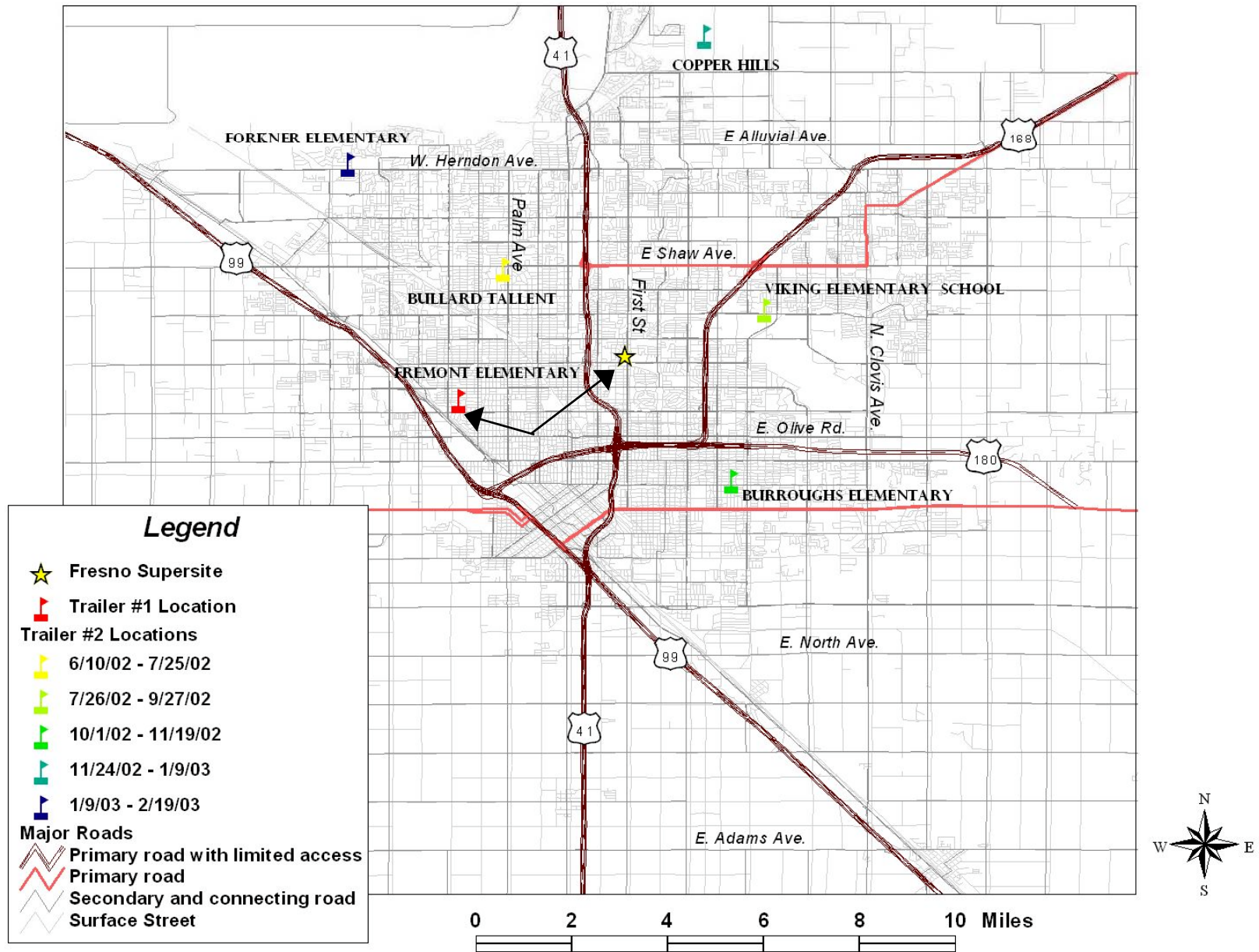
Objective

- To evaluate neighborhood-scale and urban-scale spatial variability in ambient concentrations in Fresno, CA
- Assess importance of within community variability on exposure assignments for the Fresno Asthmatic Children Environment Study (FACES) for PM, PM chemical components, and gaseous co-pollutants

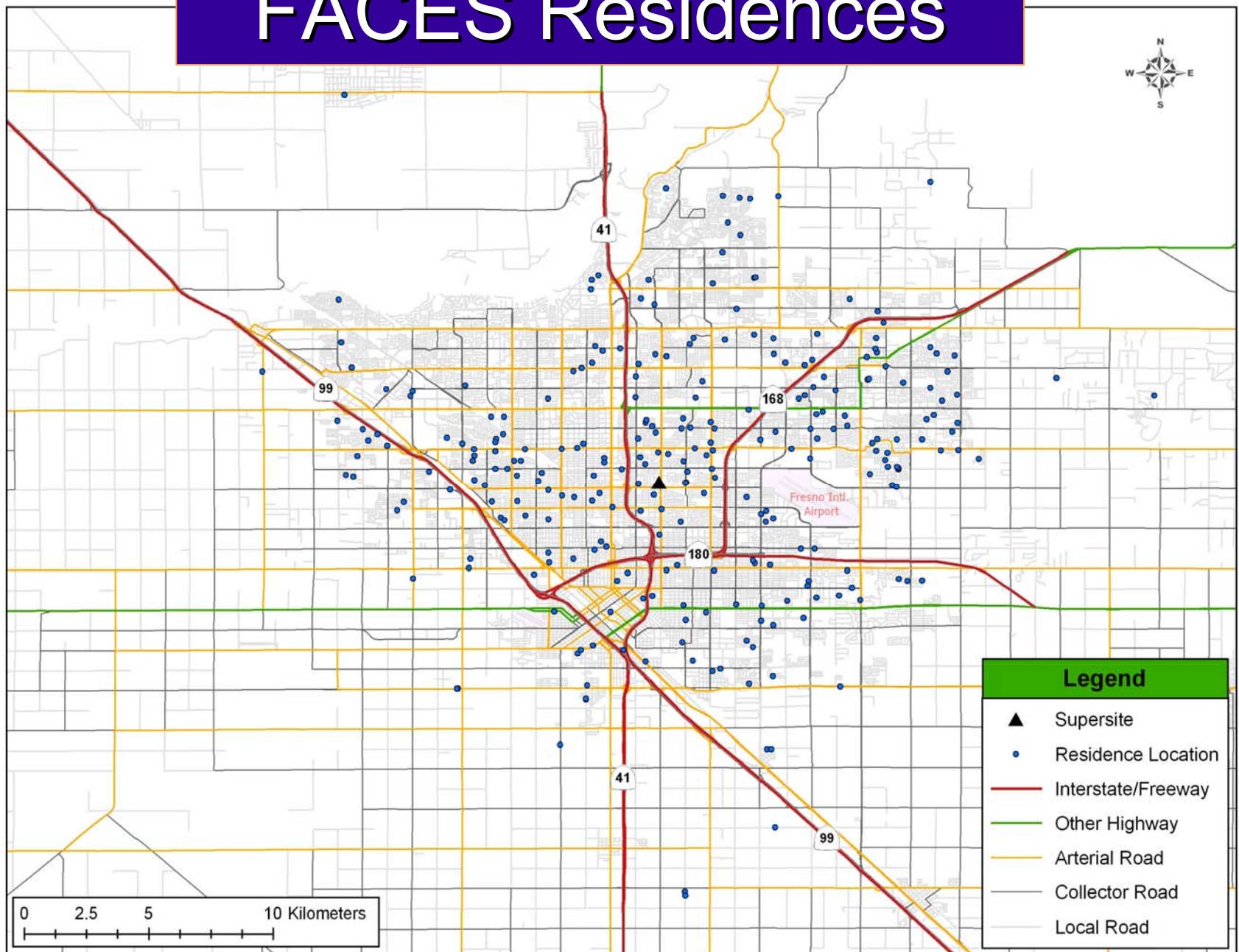
FACES

- FACES Health Study was designed to use the Fresno Supersite measurements and supplemental measurements
- Supplemental FACES Measurements
 - Supersite (2001-2005)
 - 24-hr Elements, Endotoxin, Pollens, and Spores
 - Schools (2002-2003)
 - Two mobile vans equipped much like to the Supersite
 - Residences (2002-2003)
 - 24-hr Indoor/Outdoor Measurements at 73 Residences
 - 2-week integrated indoor and outdoor measurements at ~300 Residences

FACES School Sampling Locations



FACES Residences



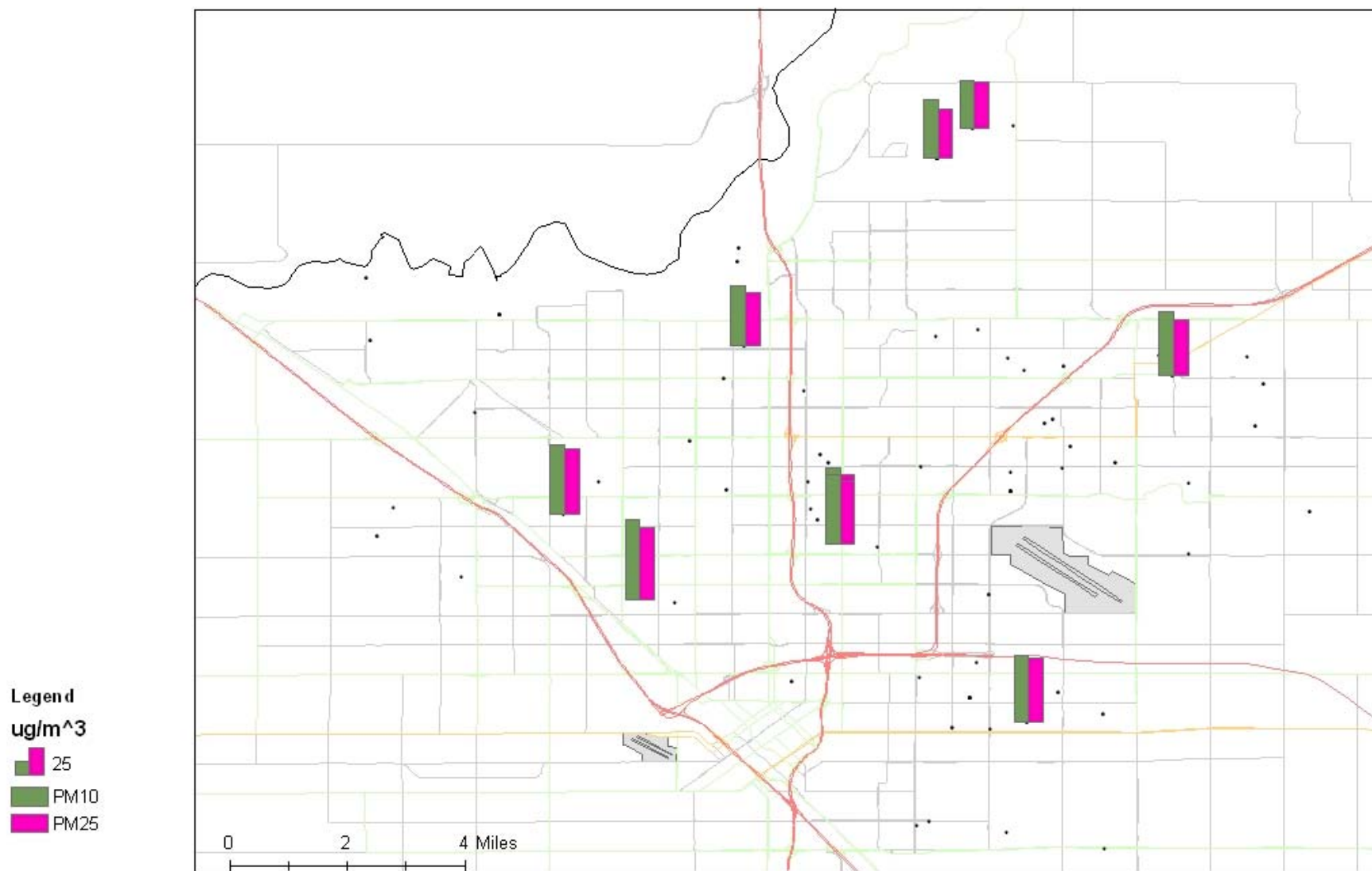
FACES Continuous Measurements

Parameter	Outdoors			Indoors
	Central Site	Schools	Homes	Homes
PM _{2.5} & PM ₁₀ Mass (BAM)	1-hr	1-hr	-	-
Black Carbon (Aeth)	1-hr	1-hr*	-	-
PM _{2.5} Total Carbon (R&P & Sunset)	1-hr	1-hr*	-	-
Total particle-bound PAH (EcoChem)	1-hr	1-hr	-	-
PM _{2.5} NO ₃ & SO ₄ (R&P)	1-hr	1-hr*	-	-
Particle Number (CPC)	1-hr	1-hr	-	-
Particle Size (SMPS)	1-hr	-	-	-
Light Scattering (Radiance Res.)	1-hr	1-hr	1-hr	1-hr
Ozone	1-hr	1-hr	-	-
NO/NO ₂	1-hr	1-hr	-	-
CO	1-hr	1-hr	-	-
SO ₂	1-hr	1-hr	-	-

FACES Integrated Measurements

Parameter	Outdoors			Indoors
	Central Site	Schools	Homes	Homes
PM _{2.5} & PM ₁₀ Mass	24-hr/1 in 6	-	24-hr/5 in 14*	24-hr/5 in 14
PM _{2.5} NO ₃ & SO ₄	24-hr/1 in 6	-	24-hr/2 in 14*	24-hr/2 in 14
PM _{2.5} OC & EC	24-hr/1 in 6	-	24-hr/2 in 14*	24-hr/2 in 14
Speciated PAHs (16)	24-hr/2 in 14*	24-hr/2 in 14*	24-hr/2 in 14*	24-hr/2 in 14
PM ₁₀ Metals	24-hr Daily	24-hr Daily	24-hr/2 in 14*	24-hr/2 in 14
PM ₁₀ Endotoxins	24-hr Daily	24-hr Daily	24-hr/5 in 14*	24-hr/5 in 14
Pollen Grains	2-hr Daily	2-hr Daily	2-hr/5 in 14*	2-hr/5 in 14
Fungal Spores	2-hr Daily	2-hr Daily	2-hr/5 in 14*	2-hr/5 in 14
Dust Allergens	-	-	-	Grab
Nicotine	-	-	-	2 wk
NO ₂	-	-	-	2 wk
Ozone	-	-	8-hr & 2 wk	8-hr & 2 wk

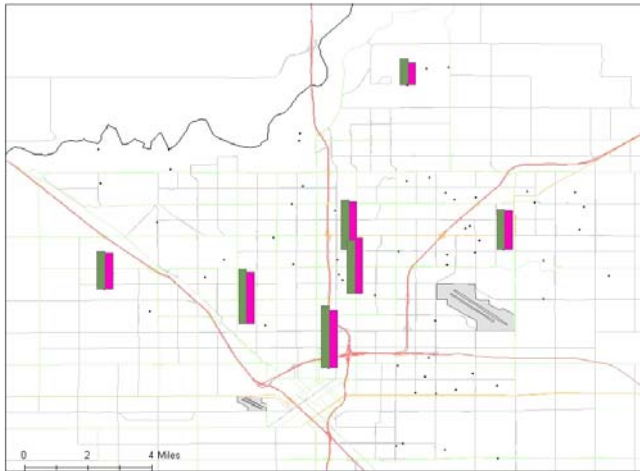
PM2.5 and PM10 Mass on 1/3/2003



PM2.5 and PM10 Mass

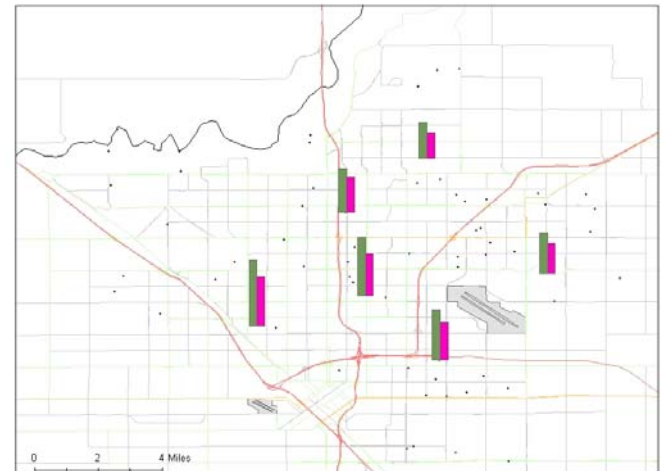
PM10 to PM25
"StartDate" = date '2002-12-24'

Legend
ug/m³
■ 25
■ PM10
■ PM25



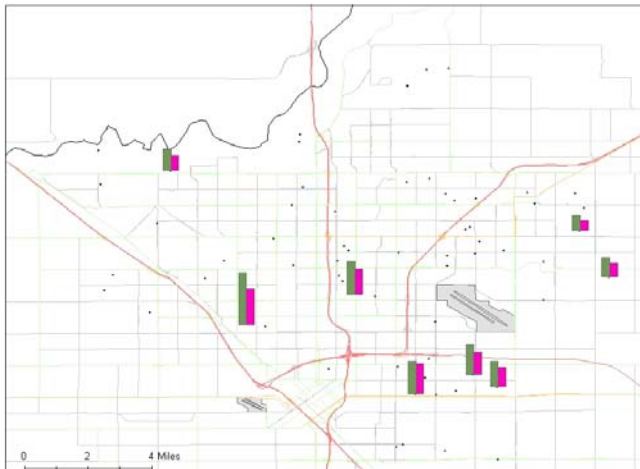
PM10 to PM25
"StartDate" = date '2002-11-20'

Legend
ug/m³
■ 25
■ PM10
■ PM25



PM10 to PM25
"StartDate" = date '2003-2-8'

Legend
ug/m³
■ 25
■ PM10
■ PM25



PM10 to PM25
"StartDate" = date '2003-1-11'

Legend
ug/m³
■ 25
■ PM10
■ PM25

